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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,770	09/29/2000	Yoshiji Kanamoto	862.C2012	2273
5514	7590	08/10/2004	EXAMINER KIANERSI, MITRA	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			ART UNIT 2143	PAPER NUMBER

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/672,770

Applicant(s)

KANAMOTO, YOSHIJI

Examiner

mitra kianersi

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 11-279374.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Claims 1-33 have been examined.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8,10,13-21 and 29-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshizawa et al (US Patent No. 6,470,380).

1. As per claim 1, an information processing apparatus having a step of storing data into storage means, comprising:

key input means for inputting a desired key code; (FIG. 22B is an illustrative drawing showing a key code (key information); and FIG. 23 is a flowchart of a process of generating data words in which each sub-word is comprised of a key code; address conversion means for converting a first address designating a storage position of said storage means for holding the data second address based on said desired key code inputted by said input means; (FIG. 13 is an illustrative drawing showing address conversion between a host processor and the signal processing accelerator); storage control means for storing said data a storage area of said storage means designated by said second address obtained by said address conversion means. (the memory control unit includes a key-data storage unit for storing key information, and controls the memory such that the memory is accessible from the external bus only when data matching the key information is provided from the external bus. Col 3, lines 20-25)

2. As per claims 2,17 and 32, the information processing apparatus according to claim 1, wherein said address conversion means performs mutually reversible conversion between said first address and said second address by the

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same key code. (only when data matching the key information is provided from the external bus, col 3, lines 23-25).

3. As per claims 3,18 and 33, the information processing apparatus according claim 2, wherein said address conversion means interchanges several address lines said first address based on the desired key code inputted by said key input means generate said second address. (Only when the signal-processing accelerator is used, should the DRAM 18 be allocated to the host-processor virtual-address space 51 as a memory accessible from the operating system. Once allocated, the DRAM 18 can serve as a venue through which data is exchanged between the host processor 31 and the signal-processing accelerator. Col 15, lines 38-50)

4. As per claims 4 and 19, the information processing apparatus according claim 2, wherein if said data is image data, said address conversion means performs address conversion so as to interchange positions of a predetermined areas divided from the image. (FIG. 36 is a flowchart of a method of extracting a predetermined set of bits from supplied data and using the predetermined set for pattern check. Col 26, lines 30-33)

5. As per claims 5 and 20, the information processing apparatus according claim 2, further comprising key code conversion means for generating a second key code from said input desired key code, (FIG. 26 is a flowchart of a process of generating data based on a key code so that the data has each bit thereof representing one bit of the key code in a time order; col 22, lines 35-37) wherein said address conversion means converts said first address to said second address based on said second key code. (FIG. 30 is a flowchart of a process of generating a plurality of data words such that the number of is included in a given data word is equal to a number that is represented by a corresponding input data word when a plurality of input data words are supplied, col 24, lines 10-15)

6. As per claim 6, the information processing apparatus according to claim further comprising input selection means selecting one input destination from

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plural data input destinations, (reference destinations by the input channel 41 and the output channel 42 are changed. Col 9, lines 38-40) wherein data from the input destination selected by said input selection means is stored into said storage means. (the number of execution programs is the same as the number of the PEs 40 to be used. The user program loads the dynamic loading library RMI.API first, and, then, specifies the input-data origin, the output-data destination, names of the execution programs, and connections between the execution programs, col 9, lines 50-55) and (the resource-management program RMI selects a required number of PEs 40 from available PEs 40 stored in a free-resource stack 43, and allocates the selected PEs 40 to respective processing of the execution programs. col 9, lines 56-60)

7. As per claim 7, the information processing apparatus according to claim 4, wherein said plural data input destinations include a scanner (rasterizing computation which scans interiors of the polygons after dividing the interiors into scan, col 10, lines 15-18), large-capacity storage device (storage units, abstract) and communication device, (information processing units and communication links, col 2, lines 53-55)

8. As per claim 8, the information processing apparatus according claim further comprising output selection means for selecting one destinations, output destination from plural data output wherein data read from said storage means outputted to the output destination selected by said output selection means. (the number of execution programs is the same as the number of the PEs 40 to be used. The user program loads the dynamic loading library RMI.API first, and, then, specifies the input-data origin, the output-data destination, names of the execution programs, and connections between the execution programs, col 9, lines 50-55) and (the resource-management program RMI selects a required number of PEs 40 from available PEs 40 stored in a free-resource stack 43, and allocates the selected PEs 40 to respective processing of the execution programs. col 9, lines 56-60)

9. As per claims 10 and 21, the information processing apparatus according claim 1, wherein said data is image data. (image-data processing, col 7, line 15)

10. As per claim 13, the information processing apparatus according to claim 1, further comprising address conversion designation means for designating execution or non-execution of address conversion by said address conversion means. (the execution programs to be executed by the PEs 40 are written specifically for the signal-processing accelerator of FIG. 1, and each of the execution programs may be a program module executed by the respective PEs 40, which serves as a processing element. In this case, the number of execution programs is the same as the number of the PEs 40 to be used. The user program loads the dynamic loading library RMI.API first, and, then, specifies the input-data origin, the output-data destination, names of the execution programs, and connections between the execution programs. col 9, lines 41-55)

11. As per claim 14, a data security method for the information processing apparatus in claim 1, comprising the steps for encryption, storing input data into said storage means while converting an address by said address conversion means based on the desired key code inputted from said key input means, data as encrypted data; for decryption, data into said storage means and outputting the outside and holding the storing said held data as input while converting the address by said address conversion means based on the same key code as said desired key code inputted from said key input means, and outputting the data as decrypted data to outside. (FIG. 22B is an illustrative drawing showing a key code (key information) col 21, lines 17-19); and (FIG. 23 is a flowchart of a process of generating data words in which each sub-word is comprised of a key code, col 21, lines 35-36) and (FIG. 13 is an illustrative drawing showing address conversion between a host processor and the signal processing accelerator, col 14, lines 60-63) and (the memory control unit includes a key-data storage unit for storing key information, and controls the memory such that the memory is accessible from the external bus only when

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data matching the key information is provided from the external bus. Col 3, lines 20-25)

12. As per claim 15, a data security method for the information processing apparatus in claim 1, comprising the steps for encryption, storing said key code and input data into said storage means while converting an address by said address conversion means based on the desired key code inputted from said key input means, and outputting them as encrypted data to the outside and holding the data; and for decryption, storing said held data as input data into said storage means while converting the address by said address conversion means based on same key code as said desired key code reproduced from said held data, and outputting said data as decrypted data to the outside. (FIG. 22B is an illustrative drawing showing a key code (key information) col 21, lines 17-19); and (FIG. 23 is a flowchart of a process of generating data words in which each sub-word is comprised of a key code, col 21, lines 35-36) and (FIG. 13 is an illustrative drawing showing address conversion between a host processor and the signal processing accelerator, col 14, lines 60-63) and (the memory control unit includes a key-data storage unit for storing key information, and controls the memory such that the memory is accessible from the external bus only when data matching the key information is provided from the external bus. Col 3, lines 20-25)

13. As per claim 16, an information processing method for storing data into storage means, comprising:
a key input step of inputting a desired key code; an address conversion step of converting a first address designating a storage position of said storage means for holding the data to a second address based on said desired key code inputted at said input step; and a storage control step of storing said data storage area of said storage means designated by said second address obtained at said address conversion step. (FIG. 22B is an illustrative drawing showing a key code (key information) col 21, lines 17-19); and (FIG. 23 is a flowchart of a process of generating data words in which each sub-word is comprised of a key

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code, col 21, lines 35-36) and (FIG. 13 is an illustrative drawing showing address conversion between a host processor and the signal processing accelerator, col 14, lines 60-63) and (the memory control unit includes a key-data storage unit for storing key information, and controls the memory such that the memory is accessible from the external bus only when data matching the key information is provided from the external bus. Col 3, lines 20-25)

14. As per claim 29, a security method use of the information processing method in claim 16a computer, comprising the steps of:
encrypting data by said information processing method and storing the data; and
decrypting the stored encrypted data accordance with the same key as that used in encryption by said information processing. (FIG. 22B is an illustrative drawing showing a key code (key information), col 21, lines 17-19); and (FIG. 23 is a flowchart of a process of generating data words in which each sub-word is comprised of a key code, col 21, lines 35-36) and (FIG. 13 is an illustrative drawing showing address conversion between a host processor and the signal processing accelerator, col 14, lines 60-63) and (the memory control unit includes a key-data storage unit for storing key information, and controls the memory such that the memory is accessible from the external bus only when data matching the key information is provided from the external bus. Col 3, lines 20-25)

15. As per claim 30, a storage medium for storing an information processing program in case of storing data storage means computer-readable format, wherein said information processing program 44 includes at least an address conversion step of converting a first address designating a storage position of said storage means for storing said data into a second address based on an input desired key code. (FIG. 22B is an illustrative drawing showing a key code (key information); col 21, lines 17-19) and (FIG. 23 is a flowchart of a process of generating data words in which each sub-word is comprised of a key code col 21, lines 35-36) and (FIG. 13 is an illustrative drawing showing address conversion between a host processor and the signal processing accelerator, col 14, lines 60-

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63) and (the memory control unit includes a key-data storage unit for storing key information, and controls the memory such that the memory is accessible from the external bus only when data matching the key information is provided from the external bus. Col 3, lines 20-25)

16. As per claim 31, the storage medium according to claim 30, wherein said information processing program further includes: key input step of inputting a desired key code; a storage control step of storing said data into a storage area of said storage means designated by the second address obtained at said address conversion step. (FIG. 22B is an illustrative drawing showing a key code (key information); col 21, lines 17-19) and (FIG. 23 is a flowchart of a process of generating data words in which each sub-word is comprised of a key code, col 21, lines 35-36) (FIG. 13 is an illustrative drawing showing address conversion between a host processor and the signal processing accelerator, col 14, lines 60-63); (the memory control unit includes a key-data storage unit for storing key information, and controls the memory such that the memory is accessible from the external bus only when data matching the key information is provided from the external bus. Col 3, lines 20-25)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 11-12, 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshizawa et al. (US Patent No. 6,470,380) and further in view of Nagashima (US Patent No. 6,088,454)

17. As per claim 9, Yoshizawa et al disclose an information processing apparatus wherein, a large-capacity storage device, a display and a communication device. Yoshizawa et al fail to teach said plural output destinations include a printer. However, Nagashima et al. disclose an invention where may be applied to either a system constituted by a plurality of equipments (e.g., a host computer, an interface device, a reader, a printer, and the like), or an apparatus consisting of a single equipment (e.g., a copying machine, a facsimile apparatus, or the like). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to employ a printer in the invention in order to enhance the speed and performance of general-purpose processors. This has made it possible to use general-purpose processors for high-speed data processing. When compared with systems of dedicated hardware described above, systems employing such general-purpose processors are characterized in that software is used for achieving various signal processing functions. Such software-based systems for achieving various signal processing functions have advantages in that they are implemented at relatively low cost and have superior functional expandability when compared to the dedicated-hardware systems.

18. As per claim 11, Yoshizawa et al. disclose an information processing, further comprising a scanner for inputting data to be stored in said storage means (rasterizing computation which scans interiors of the polygons after dividing the interiors into scan lines, col 10, lines 15-18). Yoshizawa et al fail to teach a copying machine for outputting data stored in said storage means wherein said information processing apparatus operates as a copying machine. However, Nagashima et al. disclose an invention where may be applied to either a system constituted by a plurality of equipments (e.g., a host computer, an interface device, a reader, a printer, and the like), or an apparatus consisting of a single equipment (e.g., a copying machine, a facsimile apparatus, or the like). Therefore, it would have been obvious to one of ordinary skill in the art at the

time of invention was made to employ a printer in the invention in order to enhance the speed and performance of general-purpose processors. This has made it possible to use general-purpose processors for high-speed data processing. When compared with systems of dedicated hardware described above, systems employing such general-purpose processors are characterized in that software is used for achieving various signal processing functions. Such software-based systems for achieving various signal processing functions have advantages in that they are implemented at relatively low cost and have superior functional expandability when compared to the dedicated-hardware systems.

19. As per claim 12, Yoshizawa et al. disclose an information processing apparatus according wherein a scanner or communication device can selected as an input source for inputting data to be stored in said storage means, rasterizing computation which scans interiors of the polygons after dividing the interiors into scan lines, col 10, lines 15-18). Yoshizawa et al fail to teach a facsimile for outputting data stored in said storage means wherein said information processing apparatus operates as a facsimile machine. However, Nagashima et al. disclose an invention where may be applied to either a system constituted by a plurality of equipments (e.g., a host computer, an interface device, a reader, a printer, and the like), or an apparatus consisting of a single equipment (e.g., a copying machine, a facsimile apparatus, or the like). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to employ a printer in the invention in order to enhance the speed and performance of general-purpose processors. This has made it possible to use general-purpose processors for high-speed data processing. When compared with systems of dedicated hardware described above, systems employing such general-purpose processors are characterized in that software is used for achieving various signal processing functions. Such software-based systems for achieving various signal processing functions have advantages in that they are implemented at relatively low cost and have superior functional expandability when compared to the dedicated-hardware systems.

20. As per claim 22, Yoshizawa et al. disclose a security method in use of the information processing method a printer, comprising the steps of: encrypting received image data by said information processing method and print-outputting data; and reading the print-outputted encrypted data by a scanner or copying machine capable of decryption accordance with the same key as that used in encryption by said information processing method. Yoshizawa et al fail to teach a copying machine for outputting data stored in said storage means wherein said information processing apparatus operates as a facsimile machine. However, Nagashima et al. disclose an invention where may be applied to either a system constituted by a plurality of equipments (e.g., a host computer, an interface device, a reader, a printer, and the like), or an apparatus consisting of a single equipment (e.g., a copying machine, a facsimile apparatus, or the like, col 10, lines 15-20)). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to employ a printer in the invention in order to enhance the speed and performance of general-purpose processors. This has made it possible to use general-purpose processors for high-speed data processing. When compared with systems of dedicated hardware described above, systems employing such general-purpose processors are characterized in that software is used for achieving various signal processing functions. Such software-based systems for achieving various signal processing functions have advantages in that they are implemented at relatively low cost and have superior functional expandability when compared to the dedicated-hardware systems.

21. As per claim 23, Yoshizawa et al. disclose a security method in use of the information processing method, in a scanner, comprising the steps of: encrypting read image data by said processing method; and print-outputting or decoding the encrypted data by printer or computer capable of decryption accordance with the same key as by said information processing method. Yoshizawa et al fail to teach a copying machine for outputting data stored in said storage means wherein said information processing apparatus operates as a

facsimile machine. However, Nagashima et al. disclose an invention where may be applied to either a system constituted by a plurality of equipments (e.g., a host computer, an interface device, a reader, a printer, and the like), or an apparatus consisting of a single equipment (e.g., a copying machine, a facsimile apparatus, or the like, col 10, lines 15-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to employ a printer in the invention in order to enhance the speed and performance of general-purpose processors. This has made it possible to use general-purpose processors for high-speed data processing. When compared with systems of dedicated hardware described above, systems employing such general-purpose processors are characterized in that software is used for achieving various signal processing functions. Such software-based systems for achieving various signal processing functions have advantages in that they are implemented at relatively low cost and have superior functional expandability when compared to the dedicated-hardware systems.

22. As per claim 24, Yoshizawa et al. disclose a security method in use of the information processing method in claim a copying machine, comprising the steps of: encrypting read image data by said information processing method and print-outputting the data; and reading the print-outputted encrypted data in accordance the same key as that used in encryption by said information processing method. Yoshizawa et al fail to teach a copying machine for outputting data stored in said storage means wherein said information processing apparatus operates as a facsimile machine. However, Nagashima et al. disclose an invention where may be applied to either a system constituted by a plurality of equipments (e.g., a host computer, an interface device, a reader, a printer, and the like), or an apparatus consisting of a single equipment (e.g., a copying machine, a facsimile apparatus, or the like, col 10, lines 15-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to employ a printer in the invention in order to enhance the speed and

performance of general-purpose processors. This has made it possible to use general-purpose processors for high-speed data processing. When compared with systems of dedicated hardware described above, systems employing such general-purpose processors are characterized in that software is used for achieving various signal processing functions. Such software-based systems for achieving various signal processing functions have advantages in that they are implemented at relatively low cost and have superior functional expandability when compared to the dedicated-hardware systems.

23. As per claim 25, Yoshizawa et al. disclose a security method in use of the information processing method in facsimile machine, comprising the steps encrypting read image data by said information processing method and transmitting the data; and decrypting the received encrypted data in accordance with the same key as that used in encryption said information processing method and print- outputting the data. Yoshizawa et al fail to teach a facsimile for outputting data stored in said storage means wherein said information processing apparatus operates as a facsimile machine. However, Nagashima et al. disclose an invention where may be applied to either a system constituted by a plurality of equipments (e.g., a host computer, an interface device, a reader, a printer, and the like), or an apparatus consisting of a single equipment (e.g., a copying machine, a facsimile apparatus, or the like, col 10, lines 15-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to employ a printer in the invention in order to enhance the speed and performance of general-purpose processors. This has made it possible to use general-purpose processors for high-speed data processing. When compared with systems of dedicated hardware described above, systems employing such general-purpose processors are characterized in that software is used for achieving various signal processing functions. Such software-based systems for achieving various signal processing functions have advantages in that they are implemented at relatively low cost and have superior functional expandability when compared to the dedicated-hardware systems.

24. As per claim 26, a security method further comprising the steps of: print-outputting the received encrypted data; and reading the print-outputted encrypted data, decrypting the data accordance the same key as that used in encryption by said information processing method and print-outputting the data. (reading out and executing the program code stored in the storage medium by a computer (or a CPU or MPU) of the system or apparatus. Col 10, lines 24-25) and (there is provided an encryption system including a plurality of information processing apparatuses connected to each other through a communication line, comprising at least one first apparatus holding a secret key K and a plurality of second apparatuses secretly holding at least one piece of partial information $K_{\text{sub}.1i}$ ($i=1, 2, \dots$) generated by secret sharing of the secret key K, the first and second apparatuses being connected to each other through the communication line, wherein the first apparatus can perform encryption and decryption alone, but the second apparatuses can perform encryption and decryption only by collecting not less than a predetermined number of pieces of partial information $K_{\text{sub}.1i}$. 31, col 4, lines 17-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to employ a printer in the invention in order to enhance the speed and performance of general-purpose processors. This has made it possible to use general-purpose processors for high-speed data processing. When compared with systems of dedicated hardware described above, systems employing such general-purpose processors are characterized in that software is used for achieving various signal processing functions. Such software-based systems for achieving various signal processing functions have advantages in that they are implemented at relatively low cost and have superior functional expandability when compared to the dedicated-hardware systems.

25. As per claim 27, a security method in use of the information processing method in a communication device comprising the steps of: encrypting data by said information processing method and transmitting the data; and decrypting the received encrypted data in accordance with the same key as that used in encryption by said information processing method and print-outputting the data.

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(there is provided an encryption system including a plurality of information processing apparatuses connected to each other through a communication line, comprising at least one first apparatus holding a secret key K and a plurality of second apparatuses secretly holding at least one piece of partial information $K_{\text{sub}.1i}$ ($i=1, 2, \dots$) generated by secret sharing of the secret key K , the first and second apparatuses being connected to each other through the communication line, wherein the first apparatus can perform encryption and decryption alone, but the second apparatuses can perform encryption and decryption only by collecting not less than a predetermined number of pieces of partial information $K_{\text{sub}.1i}$. 31, col 4, lines 17-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to employ a printer in the invention in order to enhance the speed and performance of general-purpose processors. This has made it possible to use general-purpose processors for high-speed data processing. When compared with systems of dedicated hardware described above, systems employing such general-purpose processors are characterized in that software is used for achieving various signal processing functions. Such software-based systems for achieving various signal processing functions have advantages in that they are implemented at relatively low cost and have superior functional expandability when compared to the dedicated-hardware systems.

26. As per claim 28, the security method according to claim wherein said key is embedded in an encryption key to be transmitted. (there is provided an encryption system including a plurality of information processing apparatuses connected to each other through a communication line, comprising at least one first apparatus holding a secret key K and a plurality of second apparatuses secretly holding at least one piece of partial information $K_{\text{sub}.1i}$ ($i=1, 2, \dots$) generated by secret sharing of the secret key K , the first and second apparatuses being connected to each other through the communication line, wherein the first apparatus can perform encryption and decryption alone, but

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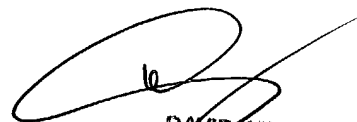
the second apparatuses can perform encryption and decryption only by collecting not less than a predetermined number of pieces of partial information K.sub.1i. col 4, lines 17-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to employ a printer in the invention in order to enhance the speed and performance of general-purpose processors. This has made it possible to use general-purpose processors for high-speed data processing. When compared with systems of dedicated hardware described above, systems employing such general-purpose processors are characterized in that software is used for achieving various signal processing functions. Such software-based systems for achieving various signal processing functions have advantages in that they are implemented at relatively low cost and have superior functional expandability when compared to the dedicated-hardware systems.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitra Kianersi whose telephone number is (703) 305-4650. The examiner can normally be reached on 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (703) 308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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July/26/2004



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